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EXTRACTS

FROM A PAMPHLET ENTITLED

EARTH CLOSETS

AND

EARTH SEWAGE.

BY

GEORGE E. WARING, JR.

(Of Ogden Farm).

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PRESENTED BY

EARTH CLOSET COMPANY,

HARTFORD, CONN.

(c. 1870's)

EARTH-CLOSET COMPANY.

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400-10.

THE EARTH SYSTEM.

T is barely two years since the first complete description of the Earth-Closet was published in America—in Judd's Agricultural Annual for 1868—and not a year and a half since the first Commode was imported; yet it may already be said that the Earth-Closet has gained such a foot-hold that its universal adoption (except in houses in which there are water-closets supplied from public water-works) is certain. It has now reached the "important if true" stage. The whole community is ready to concede that, if the Dry Earth system will accomplish what is claimed for it, nothing can prevent its general adoption. It remains necessary only to prove that it will do this, which, with the facts at command, is an easy task.

When my previous pamphlet* was written, I could adduce no evidence except that published by the English company in its advertising circular, and the single trial in my own house. I am now, fortunately, supplied with the most conclusive testimony from various parts of this country, some of which is even stronger than anything from England or India. My own opportunities for observation and experience have been excellent, and I am more than ever convinced that no better service can be rendered to the country than in extending among all classes of its people a knowledge of the inestimable advantages of the new system. I speak thus strongly, because I am sure all thought-

* Earth Closets: How to Make Them and How to Use Them.

ful persons will admit that the facts herein set forth are ample justification for any enthusiasm on the subject.

Precisely what the Earth-Closet and its accessories, as now contrived, accomplish is the following:

1. A comfortable closet on any floor of the house, supplied with earth, and cleansed of its deposits without the intervention or knowledge of any member of the household.
2. A portable commode in any dressing-room, bedroom, or closet, the care of which is no more disagreeable than is that of an anthracite stove.
3. Appliances for the use of immovable invalids which entirely remove the distressing accompaniments of their care.
4. The complete and effectual removal of all the liquid wastes of sleeping-rooms and kitchen.
5. The utilizing of a manure worth (including kitchen and laundry wastes) at least \$10 per annum for each member of the family, old and young.
6. The removal of the most fertile source of typhoid fever and dysentery, and the prevention of cholera infection.
7. The complete suppression of the odors which, despite the comfort and elegance of modern living, still hang about our cess-pools and privy-vaults, and attend the removal of their contents.

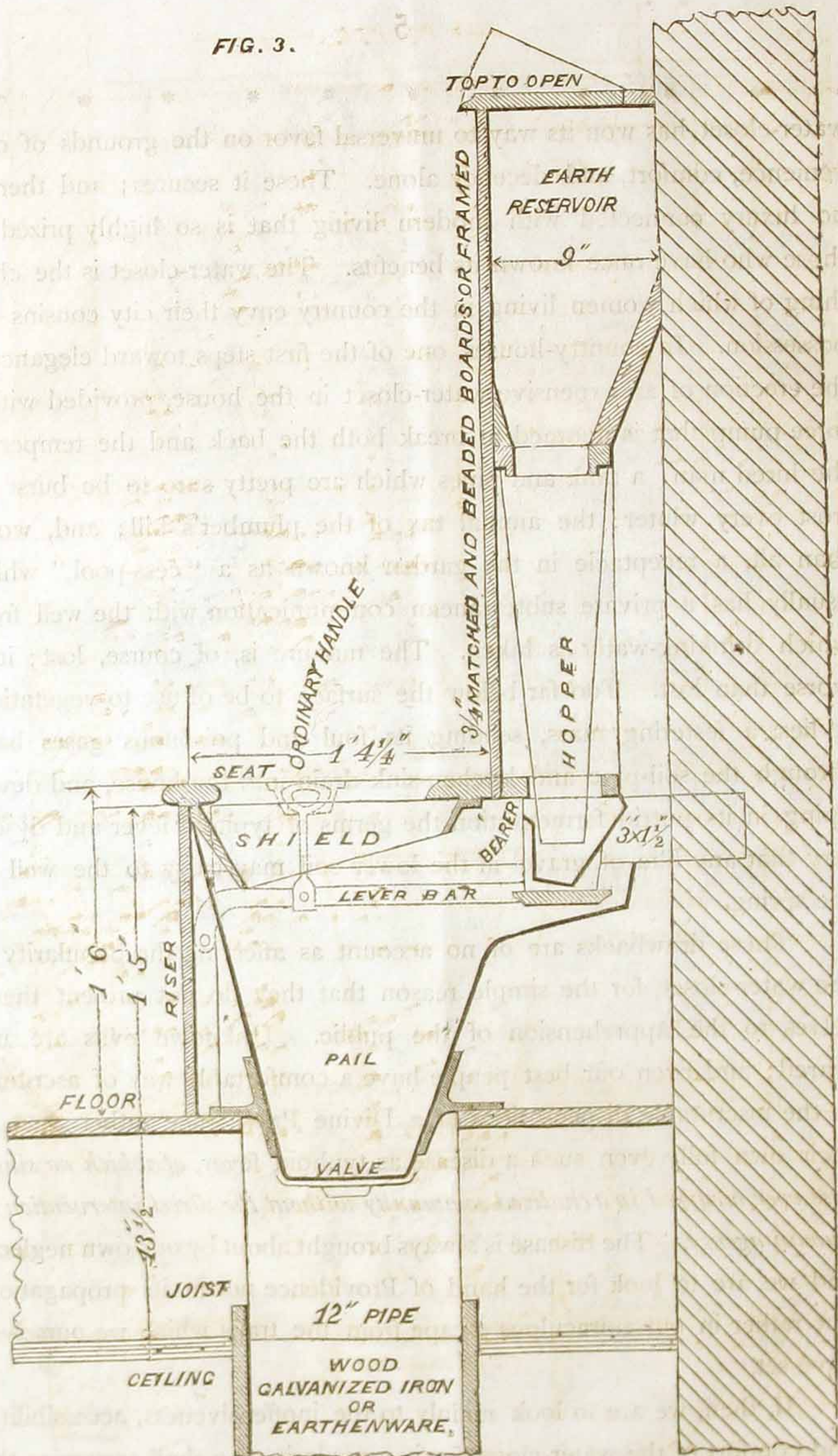
I have excepted houses which are supplied with water by public works from those into which the Earth-Closet may be expected to find its way immediately; but I am confident that the second, third, fifth, and sixth of the above specified advantages will, in due time, give the Dry Earth Commode at least an accessory place even in such houses; and I believe that these advantages, together with the question of cost, will revolutionize the sewage question, and that public sewers will, in future, be restricted to the removal of liquid drainage only.

* * * * * The water-closet has won its way to universal favor on the grounds of convenience, comfort, and decency alone. These it secures; and there is no luxury connected with modern living that is so highly prized by those who have once known its benefits. The water-closet is the chief thing of which women living in the country envy their city cousins the possession. In country-houses, one of the first steps toward elegance is the erection of an expensive water-closet in the house, provided with a force-pump that is doomed to break both the back and the temper of the hired man; a tank and pipes which are pretty sure to be burst by frost every winter; the annual tax of the plumber's bill; and, worse than all, a receptacle in the garden known as a "cess-pool," which usually has a private subterranean communication with the well from which drinking-water is taken. The manure is, of course, lost; it is worse than lost. Too far below the surface to be of use to vegetation, it lies, a festering mass, sending its foul and poisonous gases back through the soil-pipe and kitchen-sink drain into the house, and developing in its putrid fermentation the germs of typhoid fever and dysentery that any film of gravel in the lower soil may carry to the well or the spring.

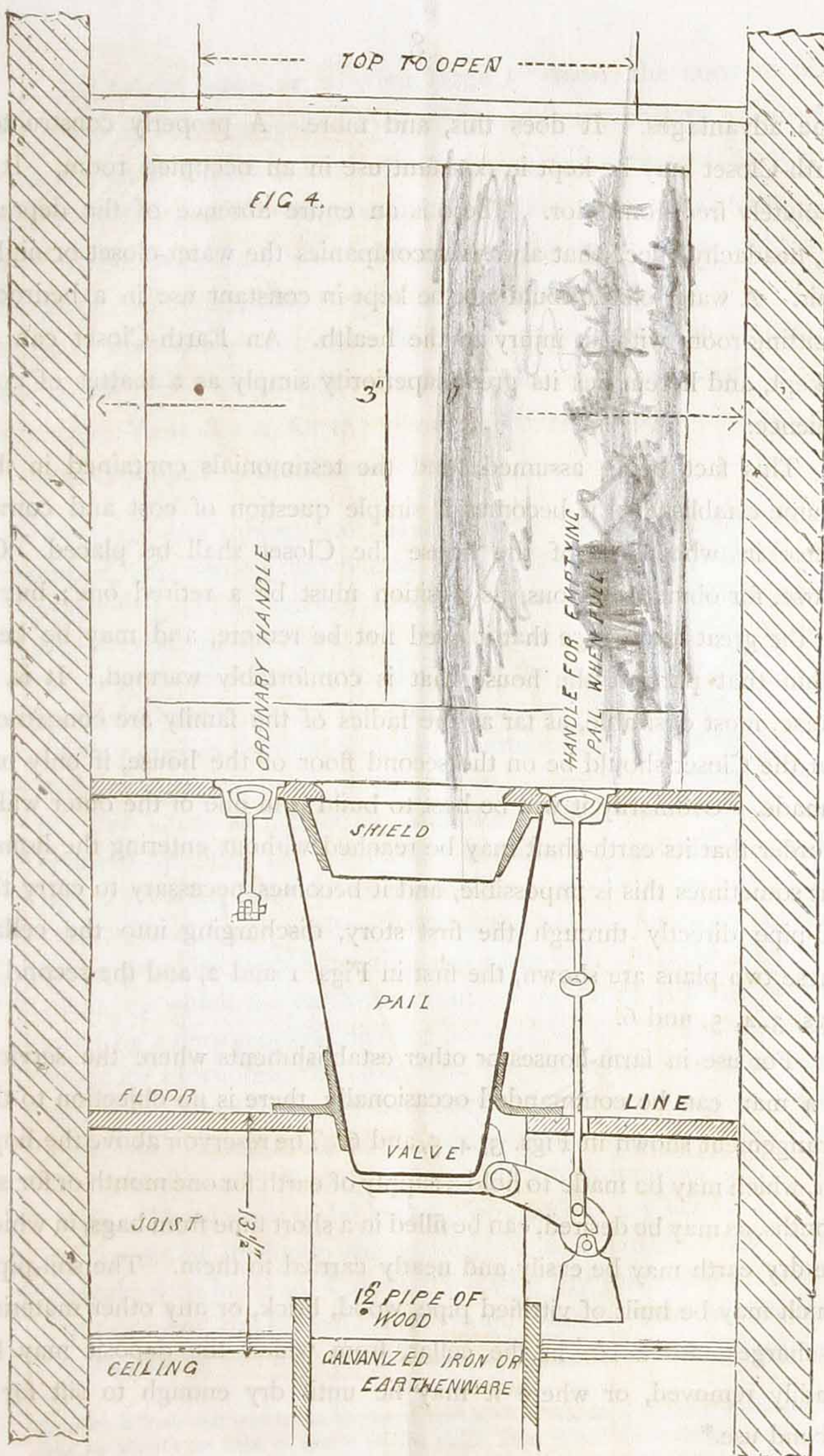
These drawbacks are of no account as affecting the popularity of the water-closet, for the simple reason that they do not present themselves to the apprehension of the public. Unknown evils are unfeared; and even our best people have a comfortable way of ascribing to the inscrutable dispensations of a Divine Providence rather than to their own folly even such a disease as typhoid fever, *of which no single case ever occurred in a civilized community without the direct intervention of human agency.* The disease is always brought about by our own neglect; and we are to look for the hand of Providence not in its propagation, but rather in our miraculous escape from the traps which we ourselves have set.

If, then, we are to look mainly to the inoffensiveness, accessibility, and comfort of the water-closet for its popularity, we shall recognize the fact that the Earth-Closet can never achieve success unless it offers the

FIG. 3.



APPARATUS FOR UP-STAIRS CLOSET, WITH VALVED PAIL.



APPARATUS FOR UP-STAIRS CLOSET, WITH VALVED PAIL.

same advantages. It does this, and more. A properly constructed Earth-Closet may be kept in constant use in an occupied room. It is absolutely free from odor. There is an entire absence of the depressing, headachy effect that always accompanies the water-closet or night-chair. A water-closet could not be kept in constant use in a bedroom or sitting-room without injury to the health. An Earth-Closet can be so kept, and herein lies its great superiority simply as a matter of convenience.

This fact being assumed, (and the testimonials contained in this volume establish it,) it becomes a simple question of cost and convenience in what part of the house the Closet shall be placed. Of course, for obvious reasons, its position must be a retired one; but it has the great advantage that it need not be remote, and may be kept within that part of the house that is comfortably warmed. It is, of course, most desirable, as far as the ladies of the family are concerned, that the Closet should be on the second floor of the house, if only one is made. Ordinarily it will be best to build it in one of the outer walls, in order that its earth-shaft may be reached without entering the house. But sometimes this is impossible, and it becomes necessary to carry the soil-pipe directly through the first story, discharging into the cellar. These two plans are shown, the first in Figs. 1 and 2, and the second in Figs. 3, 4, 5, and 6.

For use in farm-houses or other establishments where the services of a man can be commanded occasionally, there is no objection to the arrangement shown in Figs. 3, 4, 5, and 6. The reservoir above the hopper, which may be made to hold a supply of earth for one month or for six months, as may be desired, can be filled in a short time from bags, in which the dry earth may be easily and neatly carried to them. The soil-pipe, which may be built of vitrified pipe, wood, brick, or any other material, discharges into a bin in the cellar, from which the deposit may be readily removed, or where it may lie until dry enough to sift for a second use.*

* I have recently seen, in a cellar in New York, a series of large boxes standing at the side of an Earth-Closet, in which the earth was being dried for repeated use, as a test. One lot had been used six times, and it was impossible, either by its odor or its appearance, to dis-

For towns, however, whether large or small, the convenience of earth supply and removal will probably make it necessary to adopt the plan shown in Figs. 1 and 2. In thickly settled communities, it will be necessary to have some regular system of earth supply and removal that will relieve individual householders not only of the labor and personal attention necessary, but even of all thought concerning it. There are various ways in which this can be done. None has been suggested to me which seems more easily practicable than that proposed by Messrs. Olmsted, Vaux & Co. for the village of Riverside, near Chicago, which is thus described in the *Evening Post*:

“Until the subject was taken in hand by Mr. Olmsted, it was attended with certain drawbacks, such as the necessity for the householder to give his personal attention to the supplying of dry earth and the removing of deposits, and the possible difficulties with servants on the subject of attending to closets on the upper floors of the house. By Mr. Olmsted’s plan, the closets for the different stories are placed directly over each other, and they communicate with a vertical shaft, a few feet square, outside of the house. This is the channel by which the dry earth is hoisted up, and down which the deposits are discharged by tilting the trays under the seats on the different stories, an operation which may be performed in a moment by any one. The vertical shaft has a shallow vault at the bottom for receiving deposits, and is provided with a hoisting apparatus with a self-dumping arrangement, by which the earth-reservoirs on the different floors may be supplied by a person operating from below. Of the details of the arrangement for preventing the closets on the different floors from interfering with each other, it is only necessary to say that they seem simple and complete. There is no door opening from any part of the house into the vertical shaft; the only access to it is by a door opening into a back yard. This door is to be kept locked, and its key will be in the pocket of the public dustman, whose duty it is at stated intervals to make his rounds, with his load of sacks filled with dry earth, and his implements for removing the contents of the vault. He first fills the different reservoirs, putting in much or little as may be required, but filling them full;

tinguish it from that which had not been used at all. The experimenter expressed his belief that he should be able to use it twelve times, after which he could sell it for over \$20 per barrel. In this room, where the closet was in use, and different samples of earth were in various stages of preparation, there was absolutely no offensive odor.

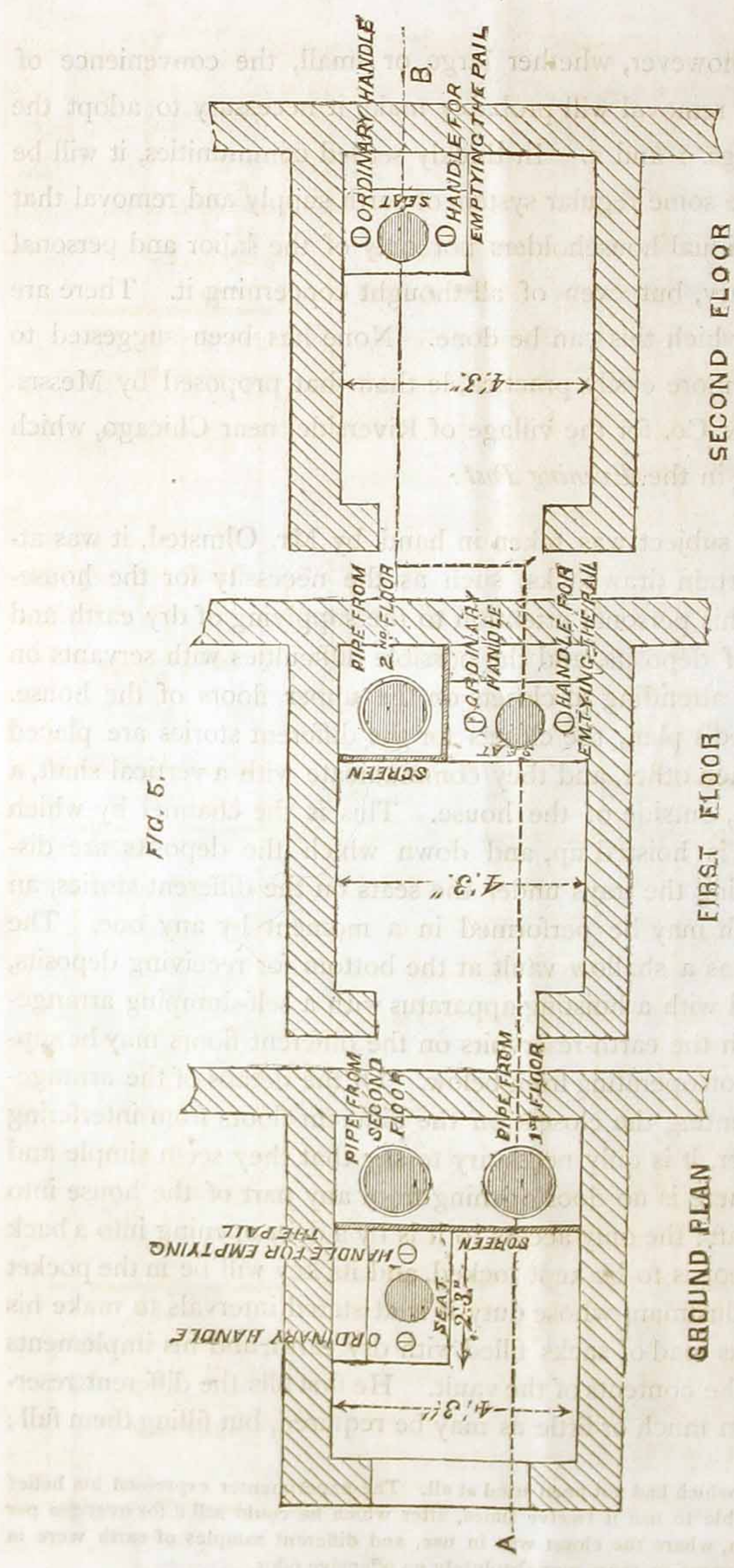
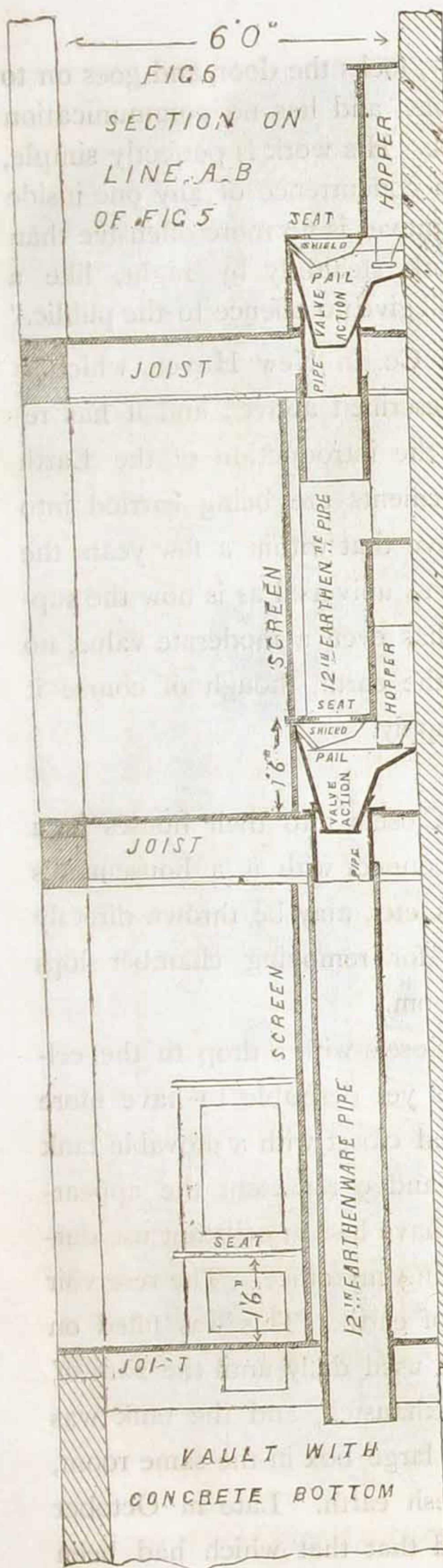


FIG. 5.

PLAN OF CLOSETS ON THREE FLOORS.

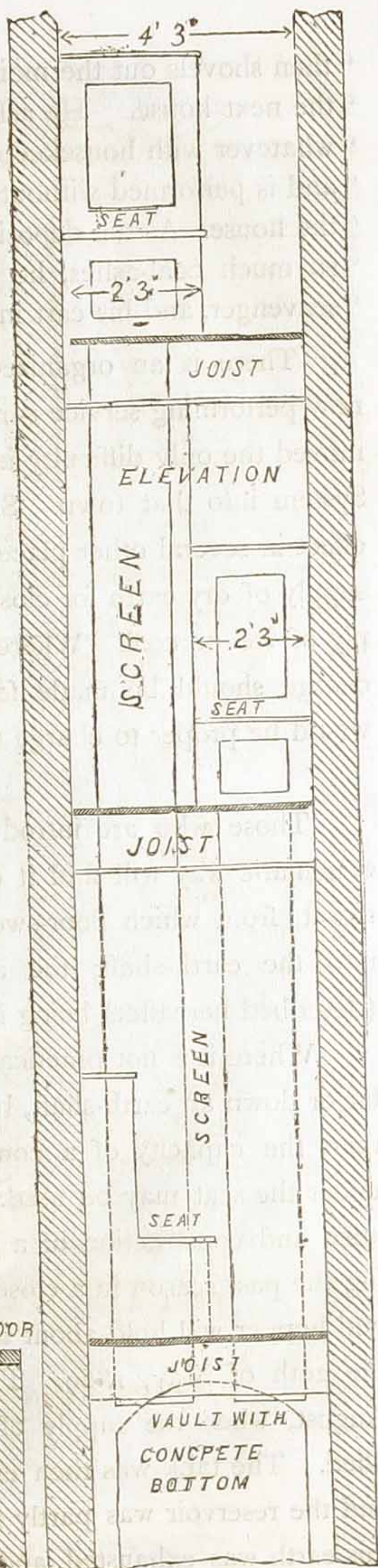
ELEVATION AND SECTION SHOWN IN FIG. 6.



2ND FLOOR

1ST FLOOR

GROUND FLOOR



"then shovels out the moist earth below, locks the door, and goes on to the next house. He asks no questions, and has no communication whatever with housekeeper or servants. His work is perfectly simple, and is performed without need for the concurrence of any one inside the house. As the deposit which he removes is no more offensive than so much coal-ashes, he need not work stealthily by night, like a scavenger, and his cart in its rounds will give no offence to the public."

There is an organized Dry Earth Co. in New Haven, which is now performing service similar to that described above; and it has removed the only difficulty in the way of the introduction of the Earth System into that town. Similar arrangements are being carried into effect in several other places, and I believe that within a few years the supply of dry earth for closet use will be as universal as is now the supply of ice or coal. Wherever manure has even a moderate value, no charge should be made for renewing the earth, though of course it would be proper to charge for the first supply.

Those who are introducing Earth-Closets into their houses in a systematic way will find it desirable to connect with it a housemaid's closet, from which floor-sweepings, ashes, etc., may be thrown directly into the earth-shaft, the arrangements for removing chamber-slops (described hereafter) being in the same room.

Where it is not practicable to build closets with a drop to the cellar or down an earth-shaft, but where it is yet desirable to have more than the capacity of a commode, a fixed closet with a movable tank under the seat may be used. Figs. 7, 8, and 9 represent the appearance and construction of a closet that I have had in constant use during the past season in a close room adjoining my office. The reservoir and hopper will hold about three barrels of earth. This was filled on the 20th of May, 1869. The closet was used daily until the 20th of August, when the supply of earth was exhausted, and the tank was filled. The tank was then emptied into a large box in the same room, and the reservoir was partly filled with fresh earth. Late in October this earth was exhausted, and it was found that that which had been taken out of the tank in August was dry enough to be used again. It

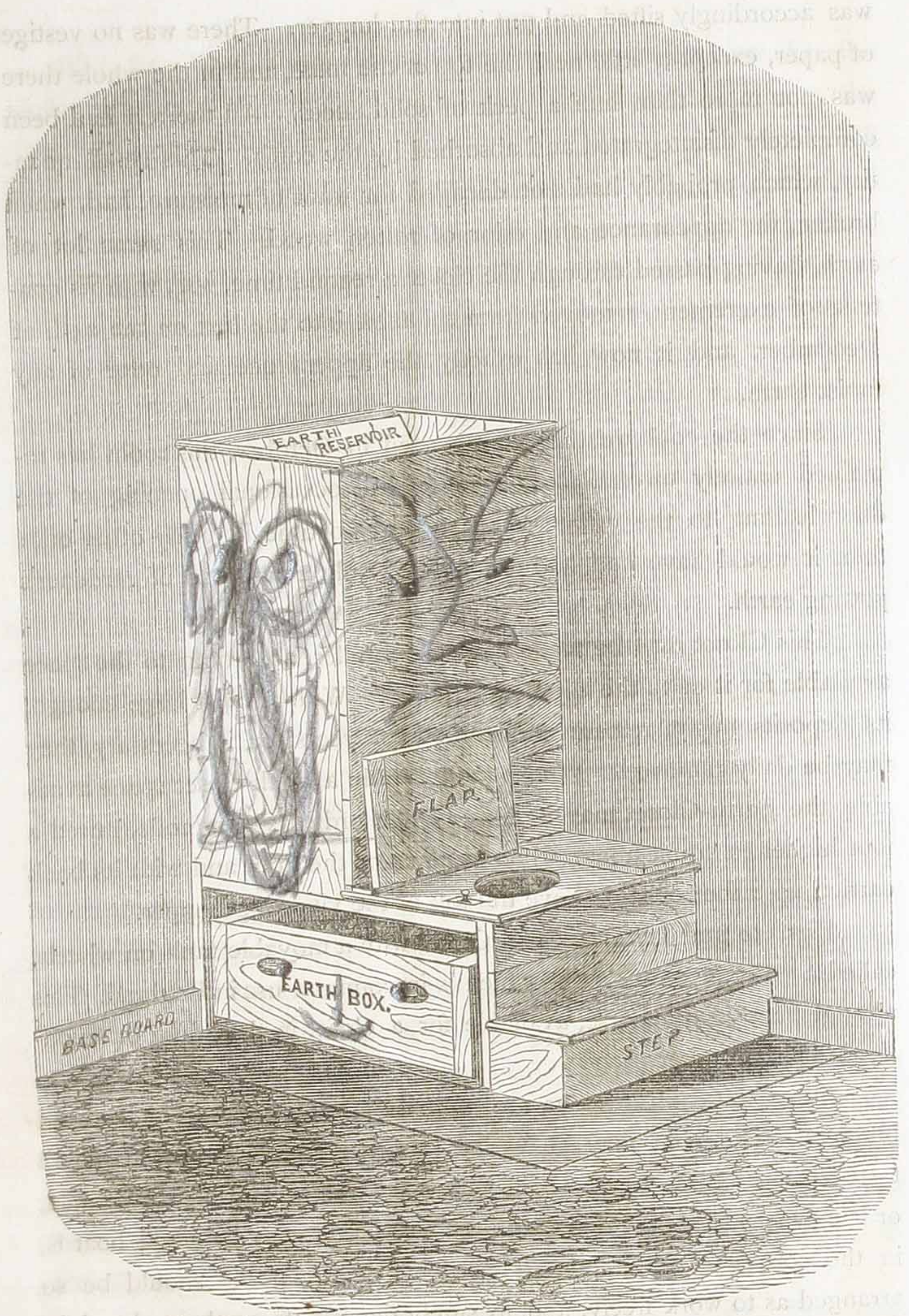


FIG. 7.—CLOSET IN CORNER OF ROOM.

was accordingly sifted and put into the hopper. There was no vestige of paper, except a little near the top of the mass, and in the whole there was not more than half a peck of solid fæces. All the rest had been completely disintegrated and absorbed by the earth. This small quantity, which probably had not decayed for want of moisture, had, when broken, the appearance and odor of rotten wood. This same lot of earth, having passed through the closet a second time, was, with its contents of excrement, removed from the tank into the box on the 24th of December, and it now has exactly the appearance and odor of any moist earth.

Since the cool weather commenced in October, this room has remained entirely unventilated, save by the occasional opening of the door leading to the office; yet it has at no time had any other odor than it would have had had it contained only a cart-load of gardener's potting-earth.

This Closet may be made larger or smaller, according to the space available for it or to the capacity required. With a vault large enough, its deposits might remain undisturbed for years, or, if necessary, they may be daily removed. Where there is only a small closet space available, the Earth-Closet may be built like an ordinary commode, raised a foot higher to admit a larger box in place of the hod, and with its back carried up a foot or two above the top of the vibrating hopper.

Figs. 10 and 11 represent a Closet with a movable tank on wheels, called a "Broadmoor Tank," which is in common use in England. This arrangement is, of course, available for a closet in the house or woodshed, or in an outer privy.

All of these illustrations are mere suggestions for architects and builders. The plan may be varied to suit all circumstances and all tastes. The Closet may be built with oiled walnut, and highly finished, or it may be made, like one that I know of, of rough hemlock boards, in the corner of an unfinished cellar. The apparatus should be so arranged as to work freely, and to surely deposit its earth at the right point. All other conditions are unessential and may be changed at pleasure.

The foregoing directions are based on the assumption that the slight expense of procuring the patented mechanical fixtures for the Closet will not be an objection; but there are thousands of poor women and invalids in the country who cannot afford even this, yet to whom it is especially desirable to avoid the exposure that the absence of conveniences within the house makes necessary. Such conditions may be very easily met by a plan which, though less convenient, is no less effective than is the regular Moule's Closet.

Any board box of convenient size, not less than eighteen inches deep, may be fitted with a movable or hinged cover, with an ordinary finished hole. Unless the box is water-tight, its joints should be filled with putty, white-lead, tar, or pitch. Three inches of dry earth should be spread upon the bottom. At its side there should stand a box of sifted dry earth or anthracite coal-ashes, with a small tin scoop or cup. After each use of the closet, enough earth should be thrown into the box to simply cover the *fæces*. A pint of earth is ample for the purpose. When this box is filled, its contents may be removed with a shovel and a corn-basket, and it may be kept in the good woman's bedroom with as little offence as the stove or the chest of drawers.

Out-of-door privies, those temples of defame and graves of decency, that disfigure almost every country home in America, and raise their suggestive heads above the garden-walls of elegant town-houses, are, I believe, doomed to disappear from off the face of the earth. Twenty years ago, every back-yard in New York City was provided with one of these buildings; now, since the water-closet has come into universal use, probably there are not twenty of them to the square mile. Twenty years hence, it is to be hoped, they will become equally rare in smaller towns and in the country. That they are objectionable on the score of decency and comfort, will be confessed by all.

What is not so generally understood is their pernicious effect upon health. The influence of subterranean stores of *fæcal* matter in the propagation of disease has already been referred to, and will be more fully discussed hereafter; but that which produces, in the aggregate, far

worse results—the aggravation of the difficulties of delicate females—has attracted less attention than its importance deserves. It is universally admitted that nothing is more injurious to health than irregularity and the undue retention of the rejectamenta of the intestines. Sir James Eyre, the celebrated physician, says: *

“The bowels and the bladder, as *receiving the most hurtful excretions of our bodies*, ought not only to be emptied when they crave relief, but a wise man waits not for this; and I would implore all of either sex to remember through life that they ought to anticipate, whenever they may be able, the call to evacuate the intestinal canal. . . . The first point to be insisted on is a daily evacuation of the bowels, which can always be accomplished, the means at our command, dietetic or medicinal, being abundant, and *from this dictum no appeal whatever can be allowed.*”

But it is not necessary to quote scientific authority to prove to any person of intelligence that in prompt and regular attention to this duty lies the cardinal secret of health. We have all been reminded in our own persons that our health and efficiency, as well as our cheerfulness and good humor, depend on perfect regularity in this regard. There can be little question that the prevailing female complaints are often induced, and always intensified, by disorders of the digestive organs, and the oppression in the lower regions that neglect in this matter causes.

Admitting the justness of this view, let us see what chance a woman living in the country has to escape the direst evils that “delicate health” has in store for its victims. The privy stands, perhaps, at the bottom of the garden, fifty yards from the house, approached by a walk bordered by long grass, which is always wet except during the sunny part of the day, overhung by shrubbery and vines, which are often dripping with wet, and exposed frequently to the public gaze. In winter, snow-drifts block the way, and during rain there is no shelter from any side. The house itself is fearfully cold, if not drifted half-full with snow or flooded with rain. A woman who is comfortably housed during stormy weather will, if it is possible, postpone for days together the dreadful necessity for

* “The Stomach and its Difficulties.”

exposure that such circumstances require. If the walk is exposed to a neighboring work-shop window, the visit will probably be put off until dusk. In either case, no amount of reasoning will convince a woman that it is her duty, for the sake of preventing troubles of which she is yet ignorant, to expose herself to the danger, the discomfort, and the annoyance that regularity under such circumstances implies.

I pass over now the barbarous foulness and the stifling odor of the privy-vault. It is only as an unavoidable evil that these have been tolerated; but I cannot too strongly urge attention to the point taken above, and insist on the fact that every consideration of humanity, and of the welfare not only of our own families, but of the whole community, demands a speedy reform of this abuse.

And this suggests a "woman's right," whose acquisition is more vital to her health and happiness than any that the supposed-to-be-coveted suffrage promises her; and she may, with just cause, insist that, however much she may be tyrannized over in the important matters of employment and voting, mankind has no right to hold her longer in subjection to this practical curse. It is hardly more important that she have a house to shelter her from the weather than that this incentive to a dangerous irregularity be removed.

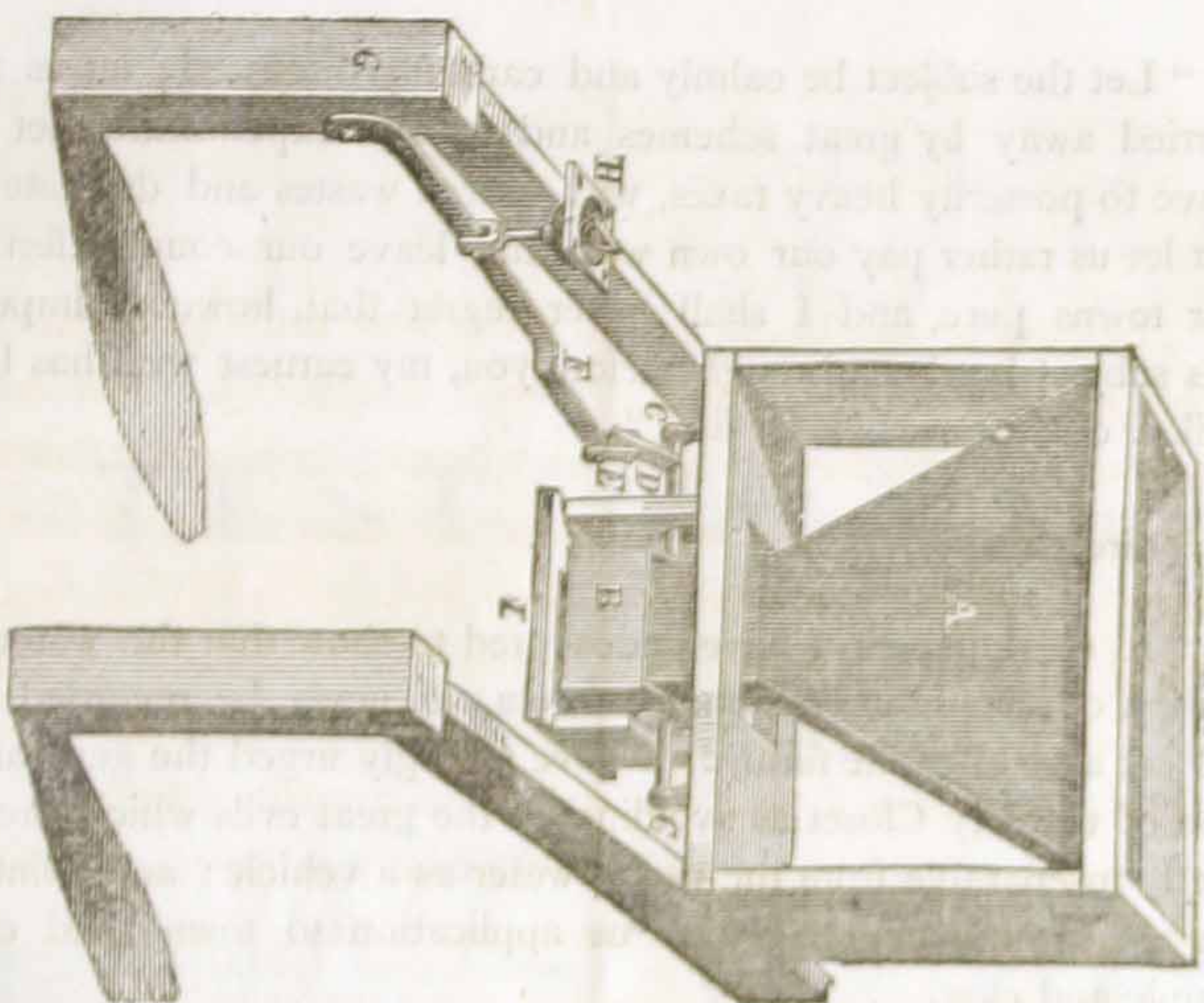
It will hardly be believed by my more civilized readers that, over more than half of the older settled parts of the United States, even the every-way objectionable system that I have described is comparatively unknown, and that the corn-field and the thicket are the only retreat provided, while the majority of farmers' houses, even at the North, are most inadequately supplied.

In view of the foregoing facts, I make no apology for calling the attention of women themselves to this important matter, believing that they will universally concede that, however much of elegance and comfort may surround them in the appointments of their homes, their mode of life is neither decent, civilized, nor safe, unless they are provided with the conveniences that the water-closet and the earth-closet alone make possible. Being the parties most interested, it rests with them to secure the necessary relief.

COMMODOES.

The form of the Earth-Closet which first commends itself to enquirers is the portable Commode, shown in Fig. 15. This is a chair, containing, in its thickened back, the vibrating hopper for holding the dry earth, and, under the seat, a hod of galvanized iron (resembling an ordinary coal-hod) for receiving the deposits. The apparatus for throwing the earth is precisely the same in all respects as that used in the large closets. I have had one of these commodes in constant use in my house for a year and a half. It usually stands in a room which connects two others that are constantly occupied. It has been used, during the whole period, three times a day on an average. The fact of its standing where it does has never prevented us from keeping the doors open into the other rooms whenever desirable. The room in which it is used for other purposes, precisely as it would have been were the Commode not there; and, in case of sickness, it is removed into the bedroom of the invalid, its contents being carried out only when the hod is filled. Under all circumstances, it is as inoffensive and innocuous as any other piece of furniture. Keeping it in constant use, I have found it desirable to have two hods—using them alternately. With this simple precaution, and the most ordinary care to prevent the hod from becoming too full, I have found it to answer its purpose more perfectly than any water-closet I have ever seen.

If I desired to give the strongest possible proof of the entire success of the Earth System, I could not better do so than by showing this Commode in constant daily use in a close room, communicating only with two heated bedrooms, and causing no more annoyance to any member of the family than if it were a box of dry ashes. The amount of attention required is trifling. About once in four or five days the servant carries a hod of dry earth from a box in the wood-shed, and pours it into the hopper, taking the full hod out from under the seat and putting the empty one in its place. The full hod is then carried out, its contents are emptied into the manure bin, and it is hung out.



THE MECHANICAL PARTS OF THE COMMODO.

The same Fixtures are used in Closets.

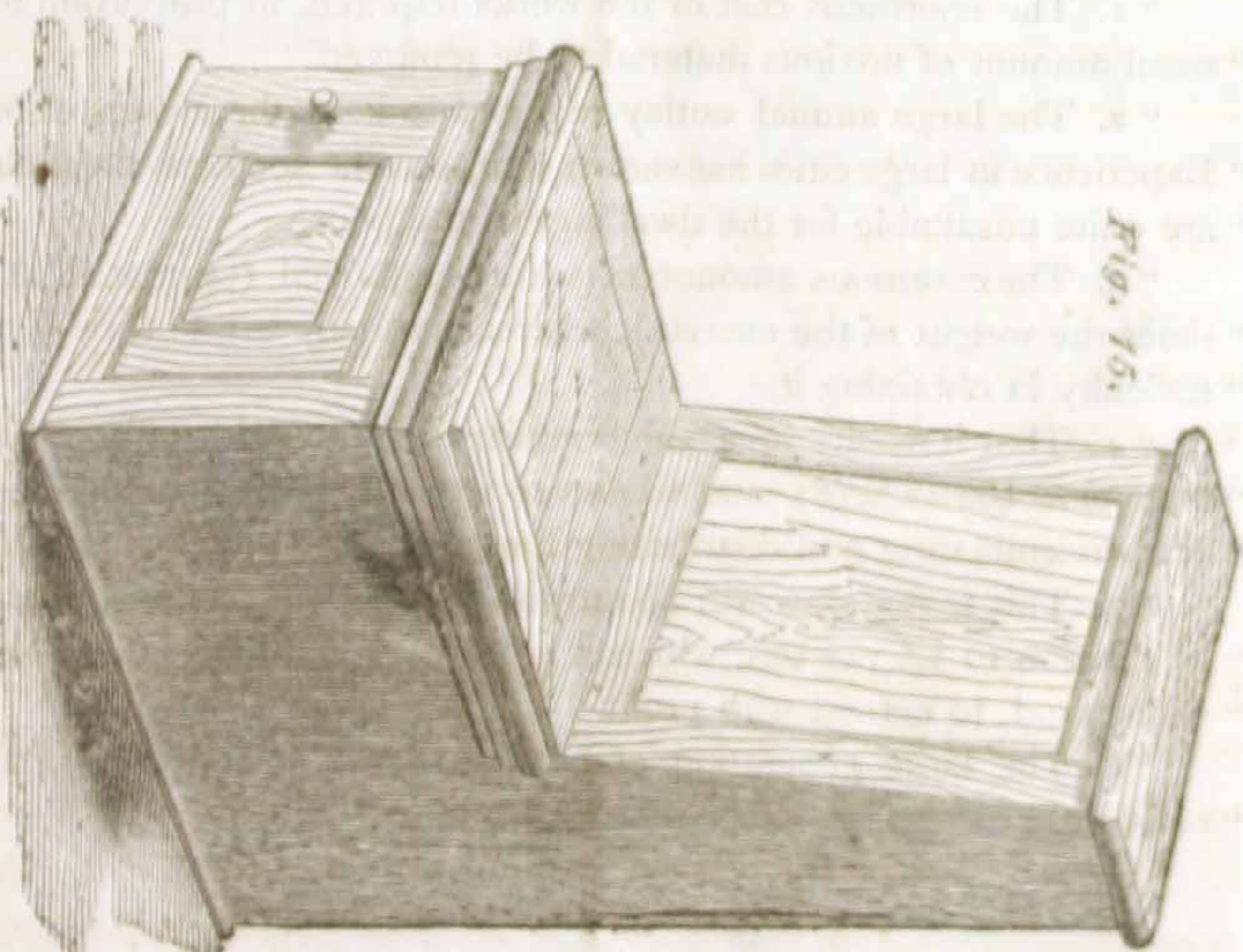


Fig. 15.

THE COMMODO.

“ Let the subject be calmly and carefully discussed ; let us not be
 “ carried away by great schemes and useless expenditure ; let us not
 “ leave to posterity heavy taxes, with barren wastes and desolate cities ;
 “ but let us rather pay our own way, and leave our country fertile and
 “ our towns pure, and I shall never regret that, however imperfectly
 “ this subject has been brought before you, my earnest wish has been to
 “ strike ‘ one more blow for life.’ ”

Third paper :

“ In these papers, I have endeavored to show that the water-closet
 “ system of disposing of human excreta can never be regarded as the
 “ perfect system of the future. I have strongly urged the general adop-
 “ tion of the Dry Closet as avoiding all the great evils which are appa-
 “ rently inseparable from the use of water as a vehicle ; and pointed out
 “ the use of charcoal, by which its application to towns and cities is
 “ simple and easy. . . .

“ Amongst other objections to the use of water as a carrier, I have
 “ specified :

“ 1. The enormous cost of the works required, in proportion to the
 “ small amount of noxious material to be removed.

“ 2. The large annual outlay required to keep the closets in order.
 “ Experience in large cities has shown that, on this account, these closets
 “ are quite unsuitable for the dwellings of the poor.

“ 3. The enormous amount of water employed (estimated at 365
 “ times the weight of the excreta), whereas in many towns there is much
 “ difficulty in obtaining it.

“ 4. That it results in a subterranean flood of filthy water, which
 “ must flow somewhere ; and wherever it flows it pollutes the region,
 “ thus disseminating and distributing the evil.


“ 5. This material, worth about 30s. per ton. has its value reduced
 “ by dilution to 1s. per ton, which it is impossible, by any known chemi-
 “ cal method, to extract with profit.

“ 6. The large generation of noxious gases in the sewers, which
 “ constantly escape into our streets and houses.

TESTIMONY

IN FAVOR OF THE

EARTH-CLOSET.

HE NOVELTY IRON WORKS in New York City occupy eight acres of ground, and employ about one thousand men. Their water-tax on water-closets was \$1,500 per annum. To escape this, they propose to take out their forty-eight water-closets and substitute the same number of Earth-Closets. After six months' trial, with nine fixed Closets, they give the following opinion of their value:

Office of THE NOVELTY IRON WORKS,

NEW YORK, Dec. 28, 1869.

We have now given the Earth-Closet a thorough trial, and can say that it gives *entire satisfaction*. I do not hesitate to recommend it for manufactories, machine-shops, etc., as in every respect superior to the water-closet.

W. P. TROWBRIDGE, VICE-PRESIDENT.

UNIVERSITY OF PENNSYLVANIA, MEDICAL DEPARTMENT,

PHILADELPHIA, Jan. 5, 1870.

I have used the Earth-Closet obtained from you in my private room in the University, since last October, with entire satisfaction.

I regard it not only as a great convenience, but as an equally great hygienic improvement, and, where water-closets cannot be constructed, as a valuable and complete substitute for them.

FRANCIS G. SMITH, M.D.

LAKE FOREST, ILL.,

Dec. 24, 1869.

We, the undersigned, having used your Commodes for several months, and having given them as severe a test as they need ever be subjected to, take pleasure in testifying to their satisfactory working, and to the perfect deodorizing properties of fine Dry Earth. For use either in public buildings or private residences we consider them preferable to water-closets, as being *entirely free from odor*.

E. P. WESTON, PRINCIPAL LAKE FOREST FEMALE SEMINARY.

IRA W. ALLEN, PRINCIPAL LAKE FOREST ACADEMY.

E. S. SKINNER, SECRETARY LAKE FOREST UNIVERSITY.

WILLIAM WARREN, WESTERN MANAGER LONDON, LIVERPOOL, AND GLOBE INSURANCE CO.

FORT ADAMS, NEWPORT, R. I.

Dec. 15, 1869.

A number of Commodes and fixtures for Earth-Closets have been in use by the garrison of Fort Adams for several months past, and have given entire satisfaction, *completely answering the purpose for which they are designed*. The application of the Earth-Closet principle is of the highest importance as regards convenience, health, and economy. It does away with a great nuisance, and enables us to utilize a most valuable fertilizer at a trifling outlay. The Commodes can be placed wherever needed for convenience—a great advantage in cases of sickness and in hospitals. It is only necessary to follow the few simple directions for their use to appreciate their advantages. *The Soldiers' Closet works perfectly*.

D. C. HOUSTON,

MAJOR U. S. ENGINEERS, BREVET COL. U. S. A.

BALTIMORE, MD., October 9, 1869.

The Earth-Closet in my establishment is a complete success, and it supplies a great want which, in this and thousands of other cases, it is difficult to meet in any other way.

W. F. DAILY, SURGICAL INSTRUMENT FACTORY,

243 West Baltimore Street.

WEST HAVEN, CONN., Nov. 19, 1869.

A few months ago I purchased one of Rev. Henry Moule's Patent Commodes or Earth-Closets, and although I had some doubts at the time in regard to its deodorizing and disinfecting qualities being as represented, yet I find, by a most careful test, that it has more than justified your recommendation. I have had sickness in my family, and the Commode has been thoroughly tested, and I would not now part with it for the price of three if I was unable to get another.

Respectfully yours, etc.,

CHANDLER FOSTER.

We take great pleasure in testifying our entire satisfaction with the practical operation of the Earth-Closet erected at our new works. The Closet is located in the lower part of the main building, in close contiguity to a passage-way daily used by many persons, and is so entirely odorless that we are quite sure few, if any, have ever suspected its design.

SAVAGE & KEYSER, CHEMICAL WORKS,
Philadelphia, Pa.

MEDICAL DIRECTOR'S OFFICE,
DEPARTMENT OF THE EAST,
NEW YORK CITY, Dec. 15, 1869.

I have carefully examined and studied the system of Earth-Closets, and have, on all proper occasions urgently recommended the system to be adopted in our army hospitals and barracks. I am well satisfied that this system, when thoroughly understood, will be generally resorted to, even where water is at command.

JOHN M. CUYLER,
SURGEON & BREVET BRIG. GEN. U. S. A.

BOSTON, Dec. 20, 1869.

Everything which concerns the health, comfort, and welfare of the people is a matter of interest to me, as it should be to every other person. I therefore commend the Earth-Closet system as, in my judgment, the most important sanitary discovery of the age, simple in its

arrangement, sure in its operation, and beneficent in its results. A careful examination of it is very certain to induce a trial of it, and the trial is equally certain to sustain all that is claimed for it. Its merits need only to be known to procure for it the widest demand. Indeed, I think no commendation of it can be too strongly expressed. "Eureka" should be its motto or trade-mark. There should be at least one Earth-Commode in every household, for its signal convenience and utility, especially in cases of sickness, it being as easily removed from room to room as a chair or a table, and very neatly constructed as a piece of furniture. The one I purchased fulfils all my expectations.

WILLIAM LLOYD GARRISON.

NEW YORK, December 22, 1869.

If I had known before leaving England that these closets were procurable here, I should not have brought over the four I imported, as my sole object was to propagate here, by their introduction, knowledge of an invention which so perfectly accomplishes its purpose that I felt sure, if once known, it must take.

It may interest you to know that my attention was first attracted to the Earth-Closet system by finding at an English country-seat, where I was visiting, Earth-Closets in use up-stairs and down, although the house, a handsome and well-appointed one, had water-closets on the same floors. The fact was so striking, and my host spoke so highly of the Earth-Closets, that I informed myself further about them, and decided to bring some out to this country.

I hope you will meet with all success; for, whether regard is had to economy, health, or decency, the Earth-Closet is, *facile princeps*, beating the water-closet decidedly on the first two points, and the every way offensive system which is in common use here in the country on all three.

I am yours faithfully,

HOWARD POTTER.

GLENBROOK FARM, WEST HAVERFORD, PA.,

October 20, 1869.

It gives me pleasure to endorse, from my own experience, both the *principle and the practical operations of your Earth-Closets*. The fixtures I purchased from you in August last I have had put up under an enclosed porch immediately at my office door, and *within ten feet of my desk*. So far from finding it in any way offensive or unpleasant, I consider it *one*

of the greatest improvements I have added to my house. Wishing you success in your efforts to introduce the system generally,

I remain yours truly,

JOHN R. WHITNEY.

Letter from Dr. R. S. Steuart, President of the Maryland Hospital, Baltimore.

MARYLAND HOSPITAL, Aug. 1, 1869.

I believe I have given the Earth-Closet a full and fair trial, and can now say without hesitation that I think it is an invention of the greatest importance to society generally.

It does all that you claim for it; and I have no doubt it will in a great degree supersede water-closets and common privies.

Its cheapness is one of its greatest advantages, for it can be obtained by families of the humblest means, securing to them a degree of domestic comfort and health unknown heretofore to all excepting the rich who can afford to have water-closets in their establishments.

It is less liable to injury and to get out of order, and more easily repaired when it does. Besides, it saves without trouble or expense the most valuable manure for the farm and garden.

I therefore recommend it to my fellow-citizens as one of the most important inventions of the age.

R. S. STEUART, PREST. MARYLAND HOSPITAL.

ST. MARK'S SCHOOL, SOUTHBOROUGH, MASE., Jan. 13, 1870.

I will give you my unhesitating and unreserved testimony to the absolute excellence of the Dry Earth System.

ROBERT LOWELL.

The following was written for the *American Agricultural Annual*, 1870, by Col. M. C. Weld.

The very important bearing this subject has upon agriculture led the writer to look carefully into it several years since, and more than three years ago the Earth-Closet was an "institution" in his family economy, introduced notwithstanding many doubts, and retained as an indispensable comfort. We heartily wish all dwellers in the country, who daily and nightly are obliged to subject themselves, and the ladies of their families, to the exposure of a walk of several rods to reach a retreat, secluded under vines and behind hollyhocks, perhaps, but oftener open to the broad glare of day and the eyes of the passer or the curious,

could have the same comfort. However secluded, the conventional privy is an abomination which, after a few years, we shall wonder was ever endured in the latter half of the nineteenth century.

The Earth-Closet, supplied constantly with dry earth, is odorless and neat. It may be in the house or in the wood-shed. It is well to have it where it may be entered unobserved, and so arranged that dry earth may be brought in and removed without attracting attention.

ALBANY, N. Y., Jan. 20, 1870.

In reply to your request for my opinion of the Dry Earth Com-
mode, I am able to speak most unequivocally in its favor.

One has been in constant use in my house for several months, and is regarded as an indispensable convenience. Doubtless, arguments in favor of the water-closet system will be offered against the Dry Earth System, *but simplicity, economy, and science must determine a verdict in favor of the latter.*

In the marvellous process of disintegration and renewal throughout the animal and vegetable worlds, a constant demand is created in one organization for those products which are eliminated from another organization as effete or useless. In the Dry Earth System, this fact is regarded, and the fertilizing constituents of the flesh and vegetables which we eat, after playing their part in the human economy, are conveniently and inoffensively preserved for the use of the farmer and the gardener in those beautiful laboratories whose chemical products are the flower, the fruit, and the grain.

Yours truly,

C. A. ROBERTSON, M.D.

BOSTON COLLEGE, Dec. 21, 1869.

From experiments which I had ordered as President of the College of the Holy Cross, Worcester, Mass., I was convinced that "Earth-Closets" and the "Earth System" were among the most useful discoveries of the age.

Your obedient servant,

R. W. BRADY, S.J.

UNION COLLEGE, SCHENECTADY, N. Y.,

Dec. 29, 1869.

I am, as I expected to be, perfectly satisfied as to their value and efficacy.

Respectfully,

(Professor) MAURICE PERKINS.

Extract from the Report of the Massachusetts State Board of Health.

EARTH CLOSETS.

"This is one of the simplest and yet one of the most useful discoveries of modern times.

"Hereafter, if we are wise, we shall apply this simple means for the purification of vaults in every place where water is not used for that purpose, as in our great cities.

"In the country it will be invaluable; and whenever in private houses cholera or typhoid fever, or any contagious disease, may occur, there should this principle involved in the Earth-Closet be adopted."

WESTBORO, MASS., Jan. 4, 1870.

We have been using your Earth-Closets for the last three weeks, and have been much pleased with them.

The principle upon which they act is simple, yet effective. The amount of dry earth or ashes scattered over the deposits seems to deodorize it so that nothing offensive escapes. Should they continue to give satisfaction (and I see no reason why they should not), I shall recommend a more extended use of them to the Board of Trustees. Your Commodes must be very convenient for family use and invaluable for the sick-room. Yours very truly,

BENJAMIN EVANS,

SUPERINTENDENT STATE REFORM SCHOOL.

NEWPORT, R. I., Jan. 7, 1870.

Most willingly do I comply with your request to give you the result of my experience with the Earth-Closet. I am glad to contribute my mite towards making known its efficacy.

The expositions and testimonials contained in your circulars so satisfied me of the reality of the discovery that *dry clay* is a deodorizer of fæces, that some months ago, as you are aware, I set up in the basement of my house a closet with a self-acting apparatus, furnished by your Company.

It were not enough to say that the experiment has been successful; the success has surpassed expectation. It proves that in dry, sifted clay there is a virtue by means of which the refuse of the human body is so taken hold of that it is reconverted into inoffensive earth. The reservoir is emptied into barrels which stand just outside of the door of the closet, and, although uncovered, there is from them no smell whatever. In these barrels there is not only the best fertilizer for the garden or

farm, but one which can be handled with as much cleanliness as though the barrels were filled with sod and earth. It seems to me that this discovery may be turned into a manifold and wide benefaction through its perfect healthfulness, its cleanliness, and the saving of so much fertilizing material.

Truly yours,

G. H. CALVERT.

CONNECTICUT STATE HOSPITAL,

NEW HAVEN, Dec. 22, 1869.

The Earth-Closets and Commodes furnished by you have been in use in this hospital for the past six months. They continue to work satisfactorily, and are daily demonstrating their usefulness. *The deposit is completely deodorized, and is no more offensive to the sight or smell than an equal quantity of coal-ashes.*

Very truly yours,

L. D. WILCOXSON, M.D.

NEW HAVEN, CONN., Jan. 3, 1870.

We concur in the opinion of Dr. Wilcoxson, and beg leave to add that no greater convenience has been added to the hospital during our connection with the institution.

W. G. ALLING, RESIDENT PHYSICIAN.

JOSEPH COLTON, STEWARD.

RAHWAY, NEW JERSEY, April 15, 1869.

I take the pleasure of saying that the Moule's Patent Commode . . . has proved in every way satisfactory; in fact, since we have had it in use, we would not be without it. *We consider it in many respects superior to the stationary water-closet in the house.*

In a sick-room it is indispensable, and, once introduced in any household, I think it will, as it eminently deserves, become a permanent piece of furniture.

Respectfully yours,

JOHN F. WHITING, MAYOR.

SCHENECTADY, N. Y., Dec. 20, 1869.

I have had the form of the Earth-Closet known as the Commode in constant use for the past two months. It being difficult to procure dry earth so late in the season, I have substituted for it sifted anthracite coal-ashes.

The Commode has worked well in all respects, and the ashes seem to be as perfect a deodorizer and disintegrater as can be desired. There is no offensive smell, and the contents of the hod when it is emptied appear to consist of ashes only. I can conceive of no objection that can be urged against the ashes, except that, from its lightness and consequent bulkiness, the hod is sooner filled than if earth were used, and must be emptied more frequently.

If the product is to be used, as it always should be, as a fertilizer, I think the ashes preferable to earth, where the soil to which it is to be applied is heavy. *As to the value of this joint result of discovery and invention, considered in all its relations, sanitary and economical, as promotive of decency and comfort, and supplying an important desideratum for every human habitation, it is impossible to overestimate it.*

Yours truly,

(Professor) J. W. JACKSON.

BOSTON, CITY HALL, Dec. 27, 1869.

As Chairman of the Committee from the Board of Aldermen of this city, appointed to assist at the Jubilee Festival, I had occasion to observe the working of the Earth-Closets, which were placed in the different rooms of the Coliseum in June last by the agent of the Earth-Closet Company, and can say that I heard no criticism of them except that which was favorable, and they appeared to be an entire success.

Truly yours,

EDWARD A. WHITE.

WETHERSFIELD, CONN., April 8, 1869.

The Commode which I received from you three weeks since has been in use in my family from that time, to my perfect satisfaction. Having no dry earth, we have used it with our anthracite coal-ashes, and, although it is in a closet opening directly into one of my family rooms, no one would suspect its being in the house. Yours truly,

S. W. ROBBINS.

BOARD OF HEALTH, OFFICE OF SANITARY SUPERINTENDENT,

CHICAGO, November 30, 1869.

I have for the past three years examined and witnessed the practical working of the Earth-Closet, and am satisfied that under a great variety of circumstances it affords the best means of disposing of night-soil, with reference to both sanitary and economical considerations.

It is particularly valuable in this city, and in all localities where similar conditions obtain with regard to drainage.

JOHN H. RAUCH, SANITARY SUPERINTENDENT.

PHILADELPHIA, April 10, 1869.

Having tested one of Moule's Patent Earth-Closets (manufactured by the Earth-Closet Company, of Hartford), with my patients in the *Pennsylvania Hospital* in a manner which may fairly be said to have been a very severe one, I am confident that it not only warrants all that is claimed for it, but *fulfils all the requirements of such a convenience for a hospital as well as for a sick-chamber, or for family use.*

ADDINELL HEWSON, M.D.

PROFESSOR SAMUEL W. JOHNSON, of Yale College, widely known as the leading Agricultural Chemist of the country, writes as follows:

SHEFFIELD SCIENTIFIC SCHOOL OF YALE COLLEGE,

NEW HAVEN, CONN., March 29, 1869.

I have read your little publication on Earth-Closets with great interest, and am glad to learn that you are taking active measures to bring the subject practically to the notice of our people. I am myself familiar with the use of dry earth as a disinfectant and a drier of feces. *Nothing can be more instant and effectual than its operation, and its use has every sanitary advantage.*

The agricultural aspect of the subject is of the highest interest and importance. The Earth-Closet enables us to effect a more than Chinese economy of our night-soil and urine, in combination with the utmost cleanliness, convenience, and cheapness.

The Commode of Mr. Moule, as improved by you and manufactured at Hartford, *is very effective and convenient* for hospital and sick-room use, and I trust the public will not be slow to avail themselves of the "Reform" which your enterprise now puts within their reach.

Yours most truly,

S. W. JOHNSON.

FORT ADAMS, R. I., Jan. 24, 1870.

The system of Earth-Closets at Fort Adams appears to have at length settled a question which for twenty years or more has been a source of infinite perplexity, trouble, and expense.

Early in August last a set of these closets was erected in one of